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ART 34 AMBT

PATENT COOPERATION TREATY



PCT

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference KWN/C695.1/W		FOR FURTHER ACTION See Form PCT/PEA/416	
International application No. PCT/GB 03/03895	International filing date (day/month/year) 09.09.2003	Priority date (day/month/year) 13.09.2002	
International Patent Classification (IPC) or national classification and IPC A63H33/10			
Applicant WARNER, TIMOTHY JOHN			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 1-7 sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 05.04.2004		Date of completion of this report 21.01.2005	
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Turmo Peruga, R Telephone No. +49 89 2399-7471 	

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB 03/03895

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-36 as originally filed

Claims, Numbers

1-40 received on 25.11.2004 with letter of 22.11.2004

Drawings, Sheets

1/9-9/9 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 28-40

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 28-40

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☐ See separate sheet for further details

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB 03/03895

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-27
	No: Claims	
Inventive step (IS)	Yes: Claims	1-27
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-27
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following document:

D1: GB-A-371638

Unless indicated otherwise reference is made to the relevant passages emphasized in the search report.

2. The subject-matter of **claim 1** appears to be novel (Art. 33(2) PCT) and inventive (Art. 33(3) PCT).

The document D1 (see in particular figures 1-4, 8, 18, 19, 25-29) is regarded as being the closest prior art and shows all the features set out in the preamble of claim 1 (the references in parentheses applying to this document):

"A basic block (see figures 1-4, 8), a plurality of pegs (see figures 25-19) and larger blocks (see figures 18, 19)".

The subject-matter of claim 1 therefore differs from this known kit of parts forming a construction toy in that at least one end face of some of the larger blocks is inclined to the said one side face of the block so as to subtend an angle relative thereto that is not 90°, so as to form a solid trapezium.

By the aforementioned inventive features, the blocks can be joined end to end by pegs received in the central end face openings so as to define an angle.

None of the available prior art describes building blocks which are adapted to be joined in this way.

3. **Claims 2 to 27** refer to preferred embodiments of the subject-matter of claim 1. Therefore, they also fulfil the requirements of Art. 33(2) and Art. 33(3) PCT.

4. The industrial applicability of **claims 1 to 27** is self-evident (Art. 33(4) PCT).

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CLAIMS

1. A kit of parts forming a construction toy comprising a plurality of building blocks of differing length and shape and a plurality of pegs for joining blocks together and to other items such as a base for creating structures, and comprising a basic block in the form of a cube and all larger blocks are whole number multiples of the basic block, so that the length dimension of each larger block is equal to a whole number multiple of the edge length of the basic cube block and the cross section of all blocks is the same and corresponds to the square face of the basic cube block, so that each larger block is a K-element block where K is the number of cube blocks which will make up the longer length of the larger block when laid side by side, and the basic cube block includes a single opening centrally of each of its faces for receiving a peg and each of the other blocks has a single opening centrally of each end face thereof for receiving a peg and all the peg receiving openings are the same size, characterised in that in one of the side faces of a K element block there are K equally spaced apart peg receiving openings and in an adjoining side face thereof there are (K - 1) equally spaced apart similar peg receiving openings.

2. A kit of parts as claimed in claim 1 wherein one or both end faces of some of the blocks is or are inclined to at least one of the sides of the block so as to subtend an angle relative thereto that is not 90° , so as to form a solid trapezium.

3. A kit of parts as claimed in claim 2 wherein both inclined ends are inclined by the same amount so as to form a regular solid trapezium.

4. A kit of parts as claimed in claim 2 or 3 in which the acute angle between the or each end face and one of the parallel sides is 75° , 67.5° , 60° or 45° .

5. A kit of parts forming a construction toy comprising a plurality of building blocks of differing length and shape and a plurality of pegs for joining the blocks together or to other

members such as a base for creating structures, wherein each block has similarly proportioned side faces and two similarly proportioned end faces each of which includes at least one opening therein for receiving a peg, some of the blocks have one opening centrally of each face and others have N spaced apart openings in one side face and $(N+1)$ spaced apart similar openings in an adjoining side face thereof, where N is a whole number equal to or greater than 1, and wherein the openings in the side faces are the same size as the openings in the end faces and are also for receiving pegs, characterised in that the or each end face of each of some of the blocks is inclined to at least some of the sides of each such block, to form a solid trapezium or wedge, so that if fitted end to end with other blocks, a corner can be constructed.

6. A kit of parts forming a construction toy comprising a plurality of building blocks of differing length and shape and a plurality of pegs for joining the blocks together and to other items such as a base for creating structures, wherein each block has similarly proportioned side faces and two similarly proportioned end faces each of which includes at least one opening therein for receiving a peg, some of the blocks have one opening centrally of each face and others have N spaced apart openings in one side face and $(N+1)$ spaced apart similar openings in an adjoining side face thereof, where N is a whole number equal to or greater than 1, and wherein the openings in the side faces are the same size as the openings in the end faces and are also for receiving pegs, characterised in that at least some of the pegs are supplied in long lengths which are provided with half-cuts at equally spaced apart points along their length to enable them to be cut or broken into lengths to suit the block or blocks into which they are to be fitted.

7. A kit of parts as claimed in any of claims 1 to 6 wherein the pegs are formed from a material which is more resiliently deformable than the blocks

8. A kit of parts as claimed in any of claims 1 to 6 wherein the pegs are formed from a rigid material and the material forming the blocks is sufficiently resiliently deformable to allow the pegs to be forced into the openings in the blocks.

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9. A kit of parts as claimed in any of claims 1 to 6 wherein the pegs are formed from a material which can be bent to form a knee or elbow, and which is sufficiently stiff that it will remain bent.

10. A kit of parts as claimed in any of claims 1 to 7 wherein the pegs are formed from rigid material and are formed with a knee or elbow between two straight ends adapted to be pushed into openings in blocks, so that if the two straight ends are pushed into openings in a pair of blocks, one block will be angled relative to the other by an angle determined by that of the knee or elbow in the peg.

11. A kit of parts as claimed in any of claims 1 to 6 wherein the pegs are formed from a rigid material and are of generally circular cross section and all have the same diameter, and the openings in the blocks are constructed so as to have radially inwardly protruding teeth in the form of an internal gear wheel, and the pitch diameter of the inwardly directed teeth is substantially the same as the diameter of each peg, so that the latter is held firmly by the teeth when pushed into the opening.

12. A kit of parts as claimed in claim 11 wherein each peg is also formed with at least one axially parallel radially protruding rib to engage between the teeth within the opening to resist rotation of the peg therein.

13. A kit of parts as claimed in any of claims 1 to 12 wherein the blocks are differently coloured.

14. A kit of parts as claimed in any of claims 1 to 12 wherein one end face of each block is differently coloured from the other.

15. A kit of parts as claimed in any of claims 1 to 12 wherein side faces of each block are differently coloured one from another and/or from the end faces.

16. A kit of parts as claimed in any of claims 1 to 12 in which one or more faces of each of the blocks is/are colour coded to indicate a specific function the block is designed to perform.

17. A kit of parts as claimed in any of claims 1 to 12 wherein side faces of the blocks having an even number of openings are one colour and side faces having an odd number of openings are another colour.

18. A kit of parts as claimed in any of claims 1 to 17 wherein the colouring of one or more faces of the blocks involves colouring the whole of the face or only a part of the face, or involves colouring only around the entrance to, or the interior of the opening or openings in the face.

19. A kit of parts as claimed in any of claims 1 to 18 wherein each block has openings in all six faces.

20. A kit of parts as claimed in any of claims 1 to 19 wherein the pegs are constructed from wood or metal or plastics or combinations thereof.

21. A kit of parts as claimed in claim 20 wherein the pegs are formed from plastics by injection moulding.

22. A kit of parts as claimed in any of claims 1 to 21 wherein the blocks are hollow.

23. A kit of parts as claimed in any of claims 1 to 22 wherein some or all of the openings extend unobstructed from one face of the block to the opposite face, and elongate pegs are employed the length of which is sufficient to allow two or more blocks to be threaded thereon one after another.

24. A kit of parts as claimed in any of claims 1 to 21 in which at least some of the openings in the blocks are blocked at a predetermined depth to form blind holes, so as to prevent a length of peg material from being pushed by more than that depth into the block.

25. A kit of parts as claimed in claim 24 wherein all the openings are blocked at a predetermined depth which is selected so that a peg can be pushed into every opening in a block without interfering with any other pegs already introduced therein.

26. A kit of parts as claimed in any of claims 1 to 25 wherein the cross-sectional shape of each peg is circular, so that when fitted into a block the block can rotate relative to the peg.

27. A kit of parts as claimed in any of claims 1 to 25 wherein the cross-sectional shape of each opening is triangular, square, or hexagonal and similarly shaped cross section pegs are employed, so that the interengagement of a peg and a block will prevent relative rotation between the block and the peg.

28. A kit of parts as claimed in any of claims 1 to 25 wherein the openings in the blocks are triangular, square or hexagonal in cross section and wherein there are two types of peg, one type having a cross section corresponding to that of the openings and dimensioned to just fit within the openings, so that when two blocks are joined thereby, no relative rotation between the two blocks can occur, and the other type having a circular cross section of a diameter such that the peg will just fit within the non-circular openings which will permit relative rotation between the two blocks if required.

29. A kit of parts as claimed in any of claims 1 to 28 wherein the blocks are constructed from wood or metal or plastics or a combination of any of the aforesaid.

30. A kit of parts as claimed in any of claims 1 to 28 wherein each block is formed from a plastics material by moulding.

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LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,
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Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
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SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

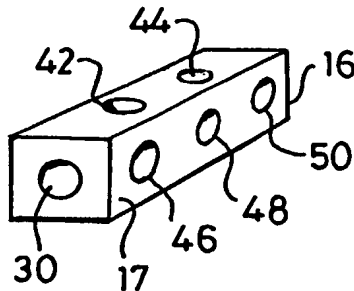
Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
17 June 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CONSTRUCTION KIT



(57) Abstract: A building element (14), (16), (18), (20) is described which is securable to other similar building elements for creating model structures. Each element comprises a block having similarly proportioned side faces (15, 17) and two similarly proportioned end faces each of which includes at least one opening (28, 30, 32, 34) for receiving a peg (12) for joining it to another block. One of the side faces includes N spaced apart openings (36, 42, 44) and an adjoining side face (15, 17) includes (N+1) spaced apart similar openings (38, 40, 46, 48, 50), also for receiving pegs (12) for joining blocks together. Each block is of constant cross section from one end to the other, and is typically square, rectangular, triangular, trapezoidal or hexagonal. At least one of the side faces may be curved, and the or each end face may be inclined so that the block comprises a solid trapezium.

The pegs (12) may be rigid and straight or may be formed with a knee or elbow between two straight ends, or may be formed from a material which can be bent to form a knee or elbow. A model structure such as a building, bridge or sports stadium can be constructed by fitting together blocks using the pegs, and where a roof or other structure is to extend at other than 90° to an adjoining part of the structure, angled pegs are employed.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/03895

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7. A63H33/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A63H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A A A	<p>GB 371 638 A (MURPHY WILLIAM) 28 April 1932 (1932-04-28) page 2, left-hand column, line 44 - page 3, right-hand column, line 128; figures 1-4,8,18,19,25-29</p> <p>-----</p> <p>US 5 009 599 A (MUELLER TIMOTHY T) 23 April 1991 (1991-04-23) column 4, line 28 - line 46; figure 7 column 4, line 55 - line 63; figure 9</p> <p>-----</p> <p>DE 87 10 893 U (KLEEHAMMER M) 22 October 1987 (1987-10-22) figures 6,8</p> <p>-----</p> <p style="text-align: center;">-/--</p>	<p>1,8,19, 20,26-30 13</p> <p>2-4,8, 10-12, 20,23, 24,26,29</p> <p>2-4,8</p>

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "a" document member of the same patent family

Date of the actual completion of the international search

2 December 2003

Date of mailing of the international search report

28.04.2004

Name and mailing address of the ISA

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Authorized officer

Bagarry, D

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/03895

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 322 466 A (BOLLI PETER ET AL) 21 June 1994 (1994-06-21) figures 4,11 -----	11
A	GB 2 108 857 A (SUDLOW DEREK DAVID) 25 May 1983 (1983-05-25) page 1, right-hand column, line 121 - page 2, right-hand column, line 91; figures -----	1,13,21
A	DE 28 40 204 A (BEIERSDORF AG) 27 March 1980 (1980-03-27) figures 18,19 -----	1,22
A	FR 2 405 730 A (JACQUEMIN GUILLAUME PHILIPPE) 11 May 1979 (1979-05-11) page 1, line 5 - line 23; figure 1 -----	1,8,24, 25

INTERNATIONAL SEARCH REPORT

International application No.
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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-4, 7-30

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-4,7-30

A kit of parts forming a construction toy comprising a plurality of building blocks of differing length and shape and a plurality of pegs, comprising :

- a basic cube block including a single opening centrally of each of its faces ;
- K-element blocks including a single opening centrally of each end face and having K openings in one side face and K-1 openings in an adjoining side face ;

whereby differently sized blocks can be stacked in a symmetrical arrangement.

2. claim: 5

A kit of parts forming a construction toy comprising a plurality of building blocks of differing length and shape and a plurality of pegs, comprising :

- K-element blocks including at least one opening centrally of each end face and having K openings in one side face and K-1 openings in an adjoining side face ;
- wherein each end face of some of the blocks is inclined ;

thereby resulting in a smooth edge for the arrangement of blocks.

3. claim: 6

A kit of parts forming a construction toy comprising a plurality of building blocks of differing length and shape and a plurality of pegs, comprising :

- K-element blocks including at least one opening centrally of each end face and having K openings in one side face and K-1 openings in an adjoining side face ;
- wherein some of the pegs are supplied in long lengths which are provided with half-cuts;

thereby enabling the pegs to be cut or broken into lengths to suit the blocks into which they are to be fitted.

INTERNATIONAL SEARCH REPORT

Inter Application No
PCT/GB 03/03895

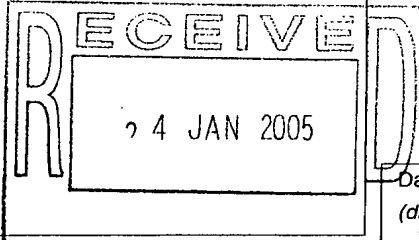
Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 371638	A	28-04-1932	NONE	
US 5009599	A	23-04-1991	NONE	
DE 8710893	U	22-10-1987	DE 8710893 U1	22-10-1987
US 5322466	A	21-06-1994	AT 81025 T	15-10-1992
			AT 106261 T	15-06-1994
			AU 5042790 A	26-09-1990
			AU 5087790 A	26-09-1990
			WO 9009827 A1	07-09-1990
			WO 9009828 A1	07-09-1990
			DE 59000330 D1	05-11-1992
			DE 59005895 D1	07-07-1994
			DK 413009 T3	02-11-1992
			DK 413012 T3	20-06-1994
			EP 0413009 A1	20-02-1991
			EP 0413012 A1	20-02-1991
			ES 2034858 T3	01-04-1993
			ES 2053178 T3	16-07-1994
			HK 155695 A	06-10-1995
			JP 2771035 B2	02-07-1998
			JP 3504344 T	26-09-1991
			JP 2773977 B2	09-07-1998
			JP 3504345 T	26-09-1991
			US 5304086 A	19-04-1994
GB 2108857	A	25-05-1983	NONE	
DE 2840204	A	27-03-1980	DE 2840204 A1	27-03-1980
FR 2405730	A	11-05-1979	FR 2405730 A1	11-05-1979

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

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KEITH W. NASH & CO.
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Cambridge CB2 1DP
GRANDE BRETAGNE



NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(PCT Rule 71.1)

Date of mailing
(day/month/year) 21.01.2005

Applicant's or agent's file reference
KWN/C695.1/W

IMPORTANT NOTIFICATION

International application No.
PCT/GB 03/03895

International filing date (day/month/year)
09.09.2003

Priority date (day/month/year)
13.09.2002

Applicant
WARNER, TIMOTHY JOHN

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference KWN/C695.1W	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/GB 03/03895	International filing date (<i>day/month/year</i>) 09.09.2003	Priority date (<i>day/month/year</i>) 13.09.2002	
International Patent Classification (IPC) or national classification and IPC A63H33/10			
Applicant WARNER, TIMOTHY JOHN			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> <i>sent to the applicant and to the International Bureau</i> a total of 1-7 sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 05.04.2004		Date of completion of this report 21.01.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Turmo Peruga, R Telephone No. +49 89 2399-7471	



INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/GB 03/03895

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-36 as originally filed

Claims, Numbers

1-40 received on 25.11.2004 with letter of 22.11.2004

Drawings, Sheets

1/9-9/9 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB 03/03895

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
 - ☒ claims Nos. 28-40
because:
 - ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
 - ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
 - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
 - ☒ no international search report has been established for the said claims Nos. 28-40
 - ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
 - the written form ☐ has not been furnished
 - ☐ does not comply with the standard
 - the computer readable form ☐ has not been furnished
 - ☐ does not comply with the standard
 - ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
 - ☐ See separate sheet for further details

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB 03/03895

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-27
	No: Claims	
Inventive step (IS)	Yes: Claims	1-27
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-27
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following document:

D1: **GB-A-371638**

Unless indicated otherwise reference is made to the relevant passages emphasized in the search report.

2. The subject-matter of **claim 1** appears to be novel (Art. 33(2) PCT) and inventive (Art. 33(3) PCT).

The document D1 (see in particular figures 1-4, 8, 18, 19, 25-29) is regarded as being the closest prior art and shows all the features set out in the preamble of claim 1 (the references in parentheses applying to this document):

"A basic block (see figures 1-4, 8), a plurality of pegs (see figures 25-19) and larger blocks (see figures 18, 19)".

The subject-matter of claim 1 therefore differs from this known kit of parts forming a construction toy in that at least one end face of some of the larger blocks is inclined to the said one side face of the block so as to subtend an angle relative thereto that is not 90°, so as to form a solid trapezium.

By the aforementioned inventive features, the blocks can be joined end to end by pegs received in the central end face openings so as to define an angle. None of the available prior art describes building blocks which are adapted to be joined in this way.

3. **Claims 2 to 27** refer to preferred embodiments of the subject-matter of claim 1. Therefore, they also fulfil the requirements of Art. 33(2) and Art. 33(3) PCT.
4. The industrial applicability of **claims 1 to 27** is self-evident (Art. 33(4) PCT).

C695.01/W

CLAIMS

1. A kit of parts forming a construction toy comprising a plurality of building blocks of differing length and shape and a plurality of pegs for joining blocks together and to other items such as a base for creating structures, and comprising a basic block in the form of a cube and all larger blocks are whole number multiples of the basic block, such that the length dimension one of the side faces of each larger block is equal to a whole number multiple of the edge length of the basic cube block and the cross section of all blocks is the same and corresponds to the square face of the basic cube block, so that each larger block is a K-element block where K is the number of cube blocks which will make up the length of the said one side face of the larger block when laid side by side, and in one of the side faces of a K element block there are K equally spaced apart peg receiving openings and in an adjoining side face thereof there are (K - 1) equally spaced apart similar peg receiving openings, characterised in that each of the blocks has a single opening centrally of each end face thereof for receiving a peg, all the peg receiving openings are the same size, and at least one end face of some of the larger blocks is inclined to the said one side face of the block so as to subtend an angle relative thereto that is not 90°, so as to form a solid trapezium, whereby in use blocks can be joined end to end by pegs received in the central end face openings either in line where the end face of each abutting block is square to the remainder of its block, or so as to define an angle if at least one of the abutting end faces is inclined to said one side face of the block.

2. A kit of parts as claimed in claim 1 wherein both ends are inclined to the said one side face and are inclined by the same amount so as to form a regular solid trapezium.

3. A kit of parts as claimed in claim 1 or 2 in which the angle between the or each end face and the said one side face of the block is 75°, 67.5°, 60° or 45°.

4. A kit of parts as claimed in any of claims 1 to 3 wherein the pegs are formed from a material which is more resiliently deformable than the blocks
5. A kit of parts as claimed in any of claims 1 to 3 wherein the pegs are formed from a rigid material and the material forming the blocks is sufficiently resiliently deformable to allow the pegs to be forced into the openings in the blocks.
6. A kit of parts as claimed in any of claims 1 to 3 wherein the pegs are formed from a material which can be bent to form a knee or elbow, and which is sufficiently stiff that it will remain bent.
7. A kit of parts as claimed in any of claims 1 to 3 wherein the pegs are formed from rigid material and are formed with a knee or elbow between two straight ends adapted to be pushed into openings in blocks, so that if the two straight ends are pushed into openings in a pair of blocks, one block will be angled relative to the other by an angle determined by that of the knee or elbow in the peg.
8. A kit of parts as claimed in any of claims 1 to 3 wherein the pegs are formed from a rigid material and are of generally circular cross section and all have the same diameter, and the openings in the blocks are constructed so as to have radially inwardly protruding teeth in the form of an internal gear wheel, and the pitch diameter of the inwardly directed teeth is substantially the same as the diameter of each peg, so that the latter is held firmly by the teeth when pushed into the opening.
9. A kit of parts as claimed in claim 8 wherein each peg is also formed with at least one axially parallel radially protruding rib to engage between the teeth within the opening to resist rotation of the peg therein.
10. A kit of parts as claimed in any of claims 1 to 8 wherein the blocks are differently coloured.

11. A kit of parts as claimed in any of claims 1 to 8 wherein one end face of each block is differently coloured from the other.

12. A kit of parts as claimed in any of claims 1 to 8 wherein side faces of each block are differently coloured one from another and/or from the end faces.

13. A kit of parts as claimed in any of claims 1 to 8 in which one or more faces of each of the blocks is/are colour coded to indicate a specific function the block is designed to perform.

14. A kit of parts as claimed in any of claims 1 to 8 wherein side faces of the blocks having an even number of openings are one colour and side faces having an odd number of openings are another colour.

15. A kit of parts as claimed in any of claims 1 to 14 wherein the colouring of one or more faces of the blocks involves colouring the whole of the face or only a part of the face, or involves colouring only around the entrance to, or the interior of the opening or openings in the face.

16. A kit of parts as claimed in any of claims 1 to 15 wherein each block has openings in all six faces.

17. A kit of parts as claimed in any of claims 1 to 16 wherein the pegs are constructed from wood or metal or plastics or combinations thereof.

18. A kit of parts as claimed in claim 17 wherein the pegs are formed from plastics by injection moulding.

19. A kit of parts as claimed in any of claims 1 to 18 wherein the blocks are hollow.

20. A kit of parts as claimed in any of claims 1 to 19 wherein some or all of the openings extend unobstructed from one face of the block to the opposite face, and elongate pegs are employed the length of which is sufficient to allow two or more blocks to be threaded thereon one after another.

21. A kit of parts as claimed in any of claims 1 to 20 in which at least some of the openings in the blocks are blocked at a predetermined depth to form blind holes, so as to prevent a length of peg material from being pushed by more than that depth into the block.

22. A kit of parts as claimed in claim 21 wherein all the openings are blocked at a predetermined depth which is selected so that a peg can be pushed into every opening in a block without interfering with any other pegs already introduced therein.

23. A kit of parts as claimed in any of claims 1 to 22 wherein the cross-sectional shape of each peg is circular, so that when fitted into a block the block can rotate relative to the peg.

24. A kit of parts as claimed in any of claims 1 to 22 wherein the cross-sectional shape of each opening is triangular, square, or hexagonal and similarly shaped cross section pegs are employed, so that the interengagement of a peg and a block will prevent relative rotation between the block and the peg.

25. A kit of parts as claimed in claims 1 to 22 wherein the openings in the blocks are triangular, square or hexagonal in cross section and wherein there are two types of peg, one type having a cross section corresponding to that of the openings and dimensioned to just fit within the openings, so that when two blocks are joined thereby, no relative rotation between the two blocks can occur, and the other type having a circular cross section of a diameter such that the peg will just fit within the non-circular openings which will permit relative rotation between the two blocks if required.

26. A kit of parts as claimed in any of claims 1 to 25 wherein the blocks are constructed from wood or metal or plastics or a combination of any of the aforesaid.

27. A kit of parts as claimed in any of claims 1 to 25 wherein each block is formed from a plastics material by moulding.

28. A kit of parts forming a construction toy comprising a plurality of building blocks of differing length and shape and a plurality of pegs for joining the blocks together or to other members such as a base for creating structures, wherein each block has similarly proportioned side faces and two similarly proportioned end faces each of which includes at least one opening therein for receiving a peg, some of the blocks have one opening centrally of each face and others have N spaced apart openings in one side face and $(N+1)$ spaced apart similar openings in an adjoining side face thereof, where N is a whole number equal to or greater than 1, and wherein the openings in the side faces are the same size as the openings in the end faces and are also for receiving pegs, characterised in that the or each end face of each of some of the blocks is inclined to at least some of the sides of each such block, to form a solid trapezium or wedge, so that if fitted end to end with other blocks, a corner can be constructed.

29. A kit of parts forming a construction toy comprising a plurality of building blocks of differing length and shape and a plurality of pegs for joining the blocks together and to other items such as a base for creating structures, wherein each block has similarly proportioned side faces and two similarly proportioned end faces each of which includes at least one opening therein for receiving a peg, some of the blocks have one opening centrally of each face and others have N spaced apart openings in one side face and $(N+1)$ spaced apart similar openings in an adjoining side face thereof, where N is a whole number equal to or greater than 1, and wherein the openings in the side faces are the same size as the openings in the end faces and are also for receiving pegs, characterised in that at least some of the pegs are supplied in long lengths which are provided with half-cuts at equally spaced apart points along their length to enable them to be cut or broken into lengths to suit the block or blocks into which they are to be fitted.

30. A kit of parts forming a construction toy from which a structure having tiered seating can be constructed comprising a plurality of building blocks of differing length and shape and a plurality of pegs for joining blocks together and to other items such as a base for creating structures, and comprising a basic block in the form of a cube and all larger blocks are whole number multiples of the basic block, so that the length dimension of each larger block is equal to a whole number multiple of the edge length of the basic cube block and the cross section of all blocks is the same and corresponds to the square face of the basic cube block, so that each larger block is a K-element block where K is the number of cube blocks which will make up the longer length of the larger block when laid side by side, and the basic cube block includes a single opening centrally of each of its faces for receiving a peg and each of the other blocks has a single opening centrally of each end face thereof for receiving a peg and all the peg receiving openings are the same size, characterised by cladding panels which in use are securable to lines of blocks to tie the blocks together.

31. A kit of parts as claimed in claim 30 wherein the cladding panels have pegs protruding from the rear face thereof by which they can be fitted to side or end faces of blocks.

32. A kit of parts as claimed in claim 30 wherein the cladding panels have openings therein through which pegs can be pushed to engage in openings in side or end faces of blocks, for securing the panels to the blocks.

33. A kit of parts as claimed in claims 30 or 31 wherein each cladding panel comprises a joined up line of model seats having pegs protruding from its underside or rear for insertion into an opening in a block.

34. A kit of parts as claimed in any of claims 30 to 33 which when assembled resembles a sports arena or stadium having tiered seating around a central area.

35. A kit of parts as claimed in claim 34 wherein the cladding panels are adapted to be fitted to the front faces of the lowermost layer of blocks defining the tiered seating to simulate advertising hoardings.

36. A kit of parts as claimed in claims 34 or 35 wherein the cladding panels simulate tiered terraces and/or tiered seating and/or external walls of the terraces.

37. A kit of parts as claimed in claim 30 wherein tiered assemblies are constructed from a lattice of elongate blocks joined by pegs and the cladding panels are secured to the lattice of blocks.

38. A kit of parts as claimed in any of claims 1 to 37 further comprising a baseboard having a matrix of holes formed therein into which pegs can be push fitted to allow blocks to be secured to the board.

39. A kit of parts as claimed in claim 39 wherein the board is pre-printed to define a central area as a football, or baseball, or American football, or rugby pitch, or an athletics track.

40. A model structure constructed from a kit of parts as claimed in any of claims 1 to 37 comprised of a plurality of blocks fitted together using pegs to form tiered assemblies of blocks arranged to form terraces around a central area in the form of a stadium or open-air theatre.